



REPLACEMENT SHEET
Ricky S. Amos et al./LUJ
FIS920020157US1

1/16

Pre high temp processes:

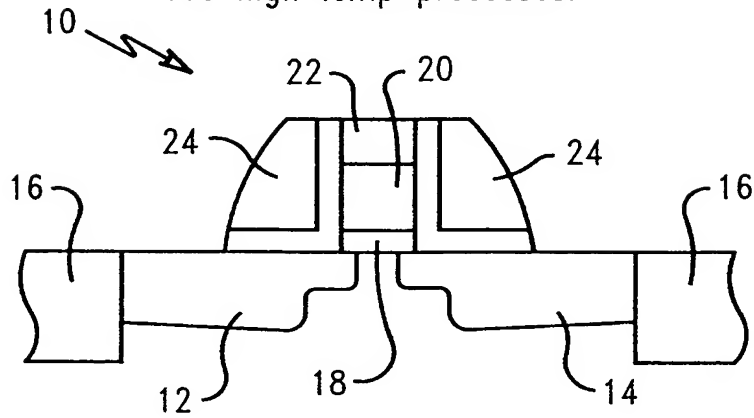


FIG. 1A

Post high temp processes:

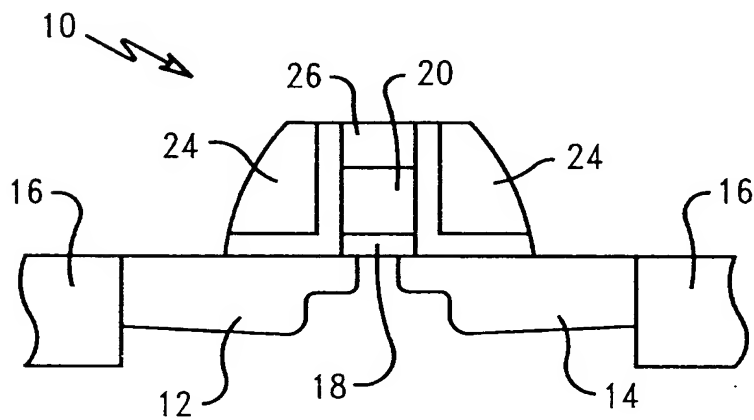


FIG. 1B

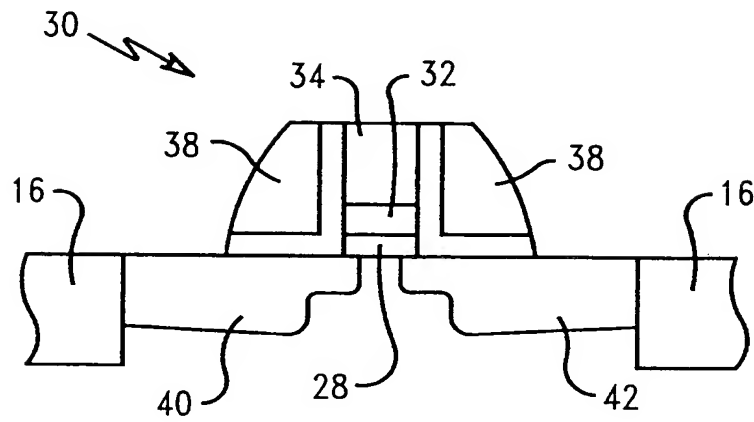


FIG. 2A

Pre high temp processes:

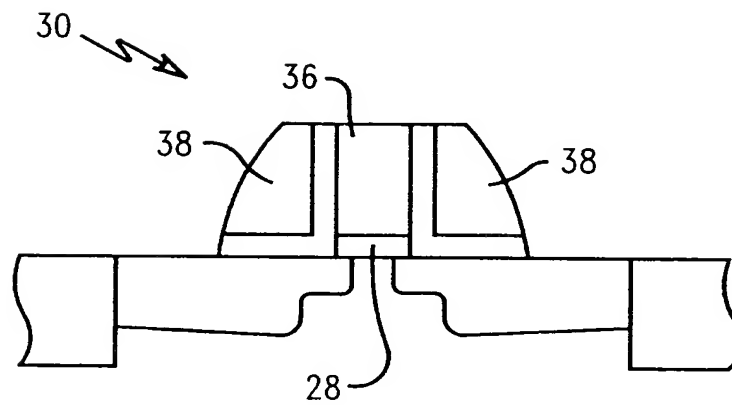
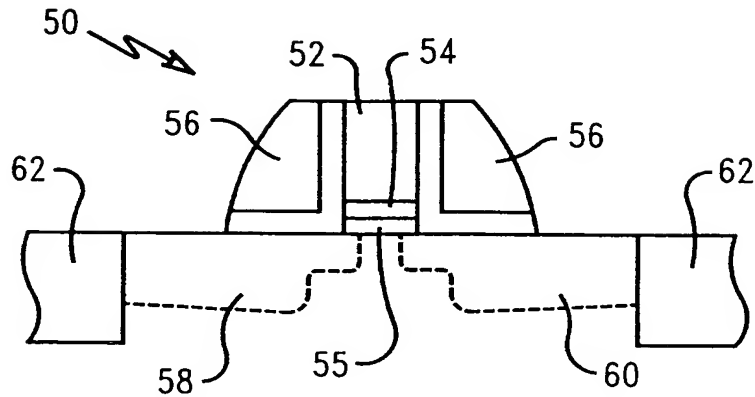


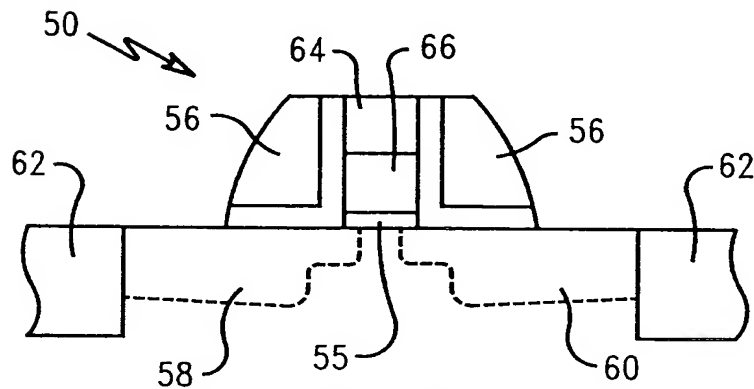
FIG. 2B

Post high temp processes:

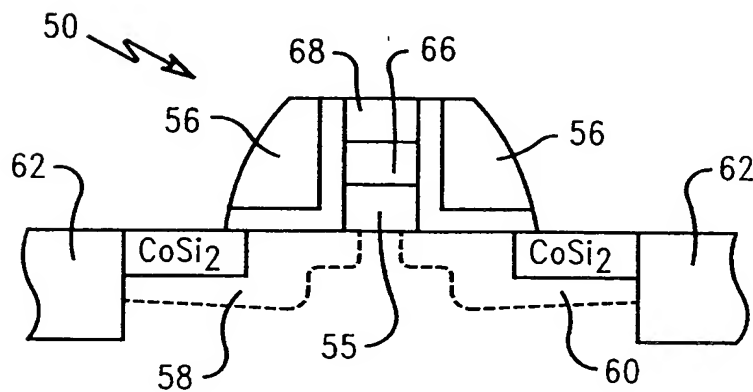
3/16



Pre high temp processes:



Post high temp processes:



Post source/drain/gate silicide (assumed CoSi_2)

4/16

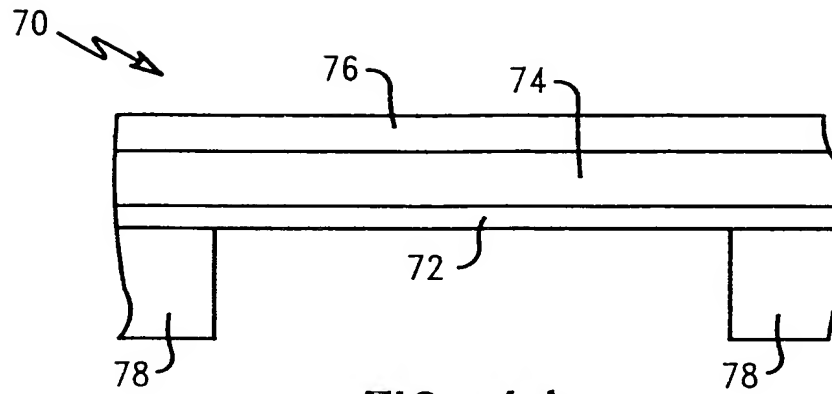


FIG. 4A
Pre silicide formation:

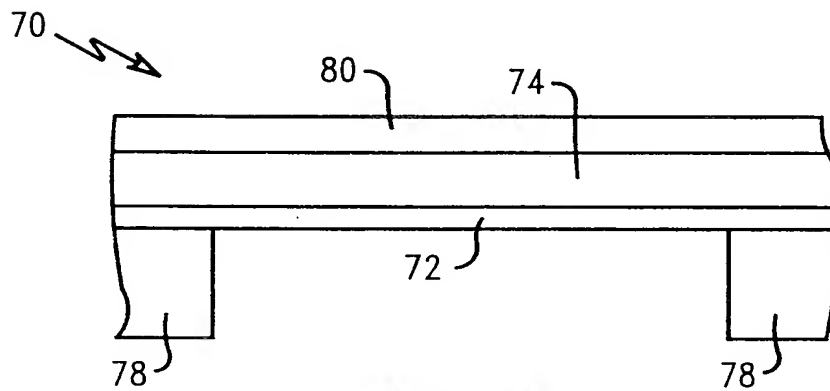


FIG. 4B
Post silicide formation:

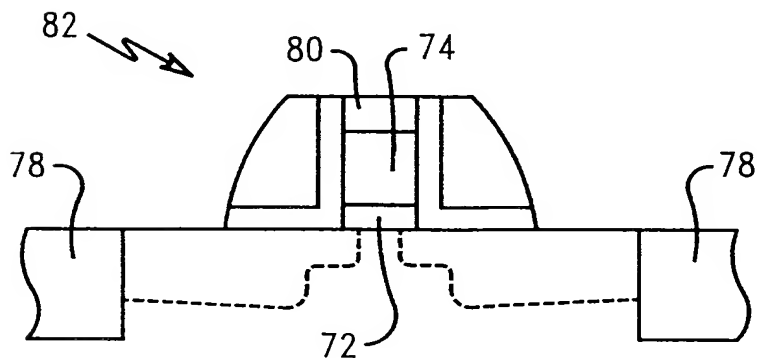


FIG. 4C
Post high temp processes:

5/16

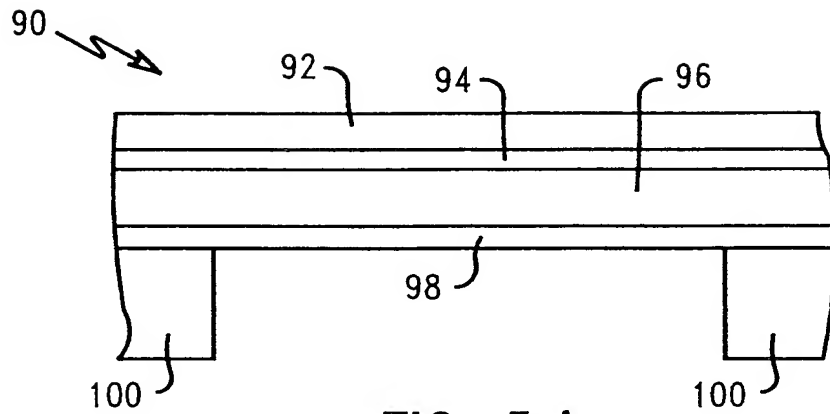


FIG. 5A

Pre silicide formation:

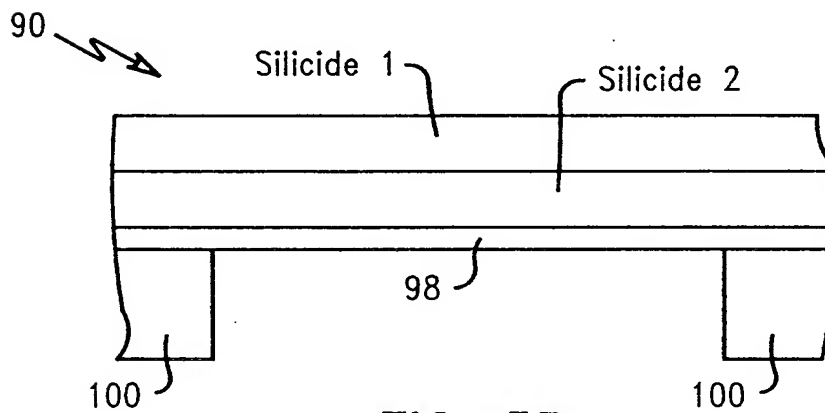


FIG. 5B

Post silicide formation:

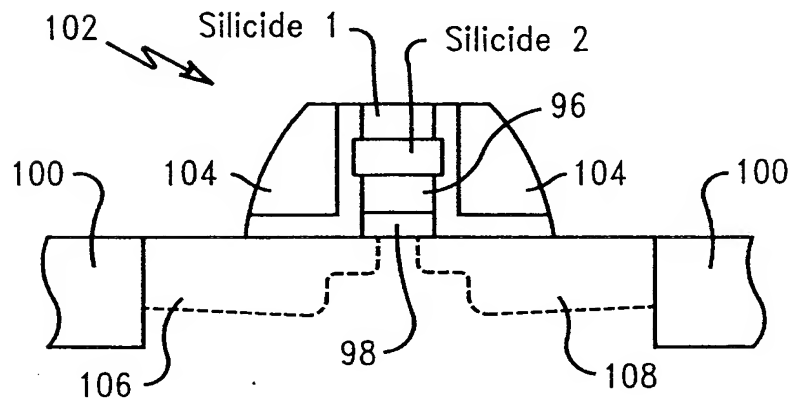


FIG. 5C

Post high temp processes:

6/16

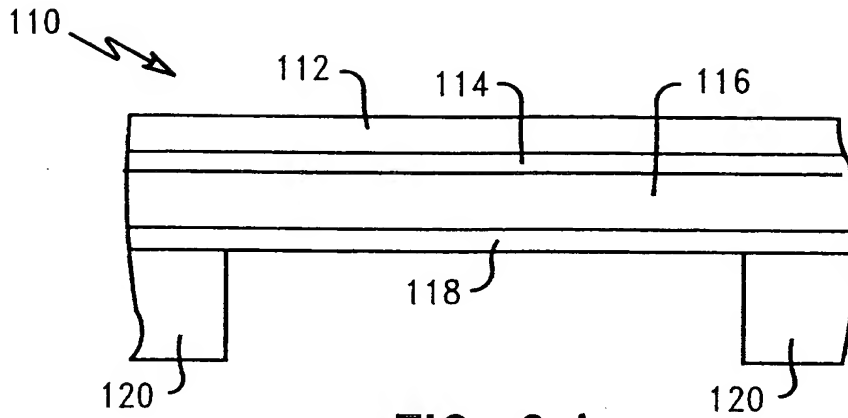


FIG. 6 A
Pre silicide formation:

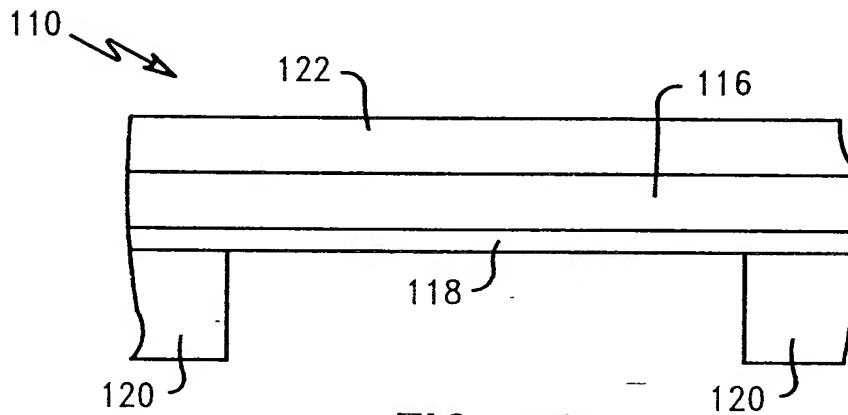


FIG. 6 B
Post silicide formation:

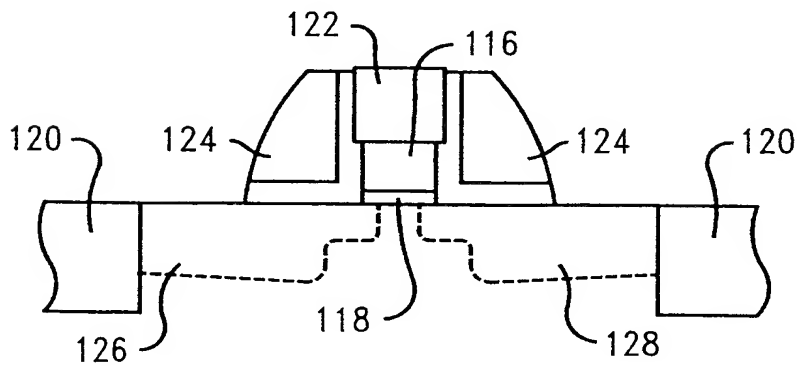


FIG. 6 C
Post high temp processes:

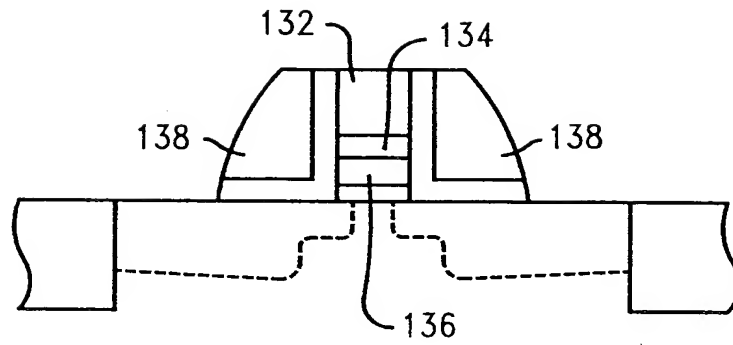


FIG. 7

REPLACEMENT SHEET
FIS920020157US1

8/16

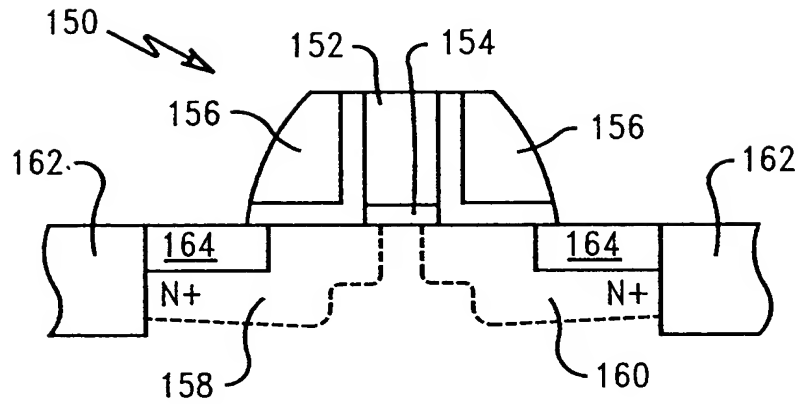


FIG. 8A

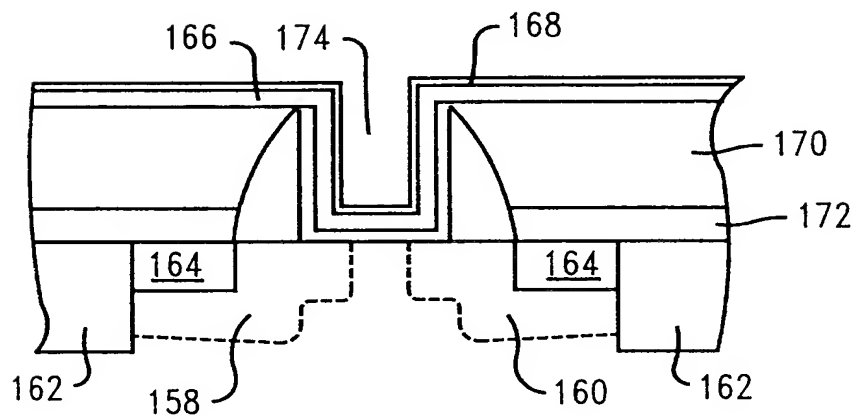


FIG. 8B

9/16

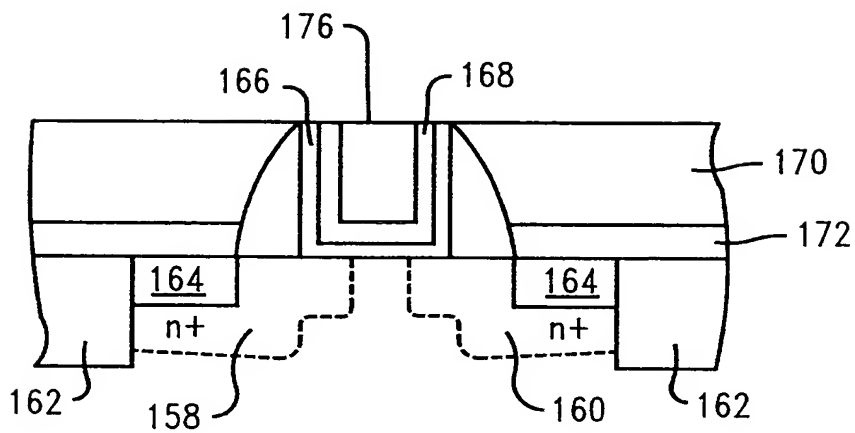


FIG. 8C

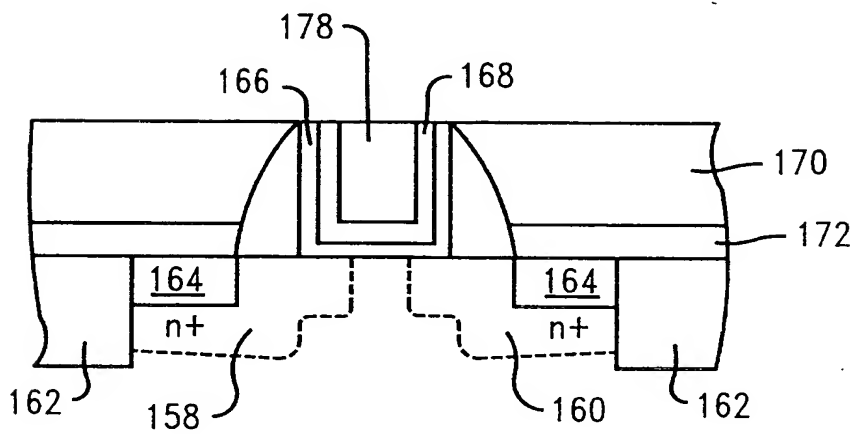


FIG. 8D

REPLACEMENT SHEET
FIS920020157US1

10/16

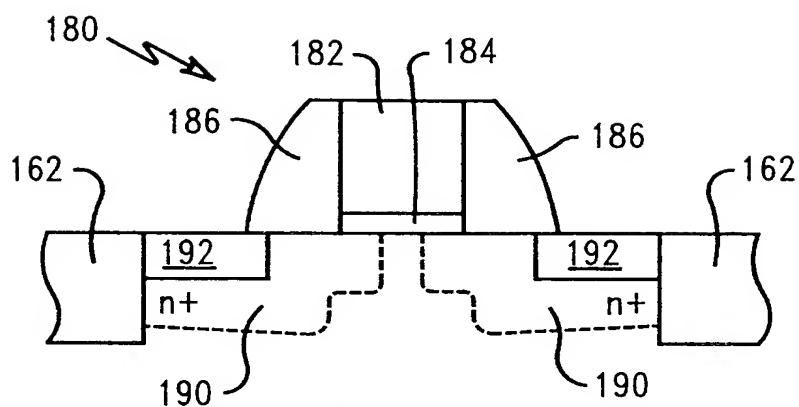


FIG. 9A

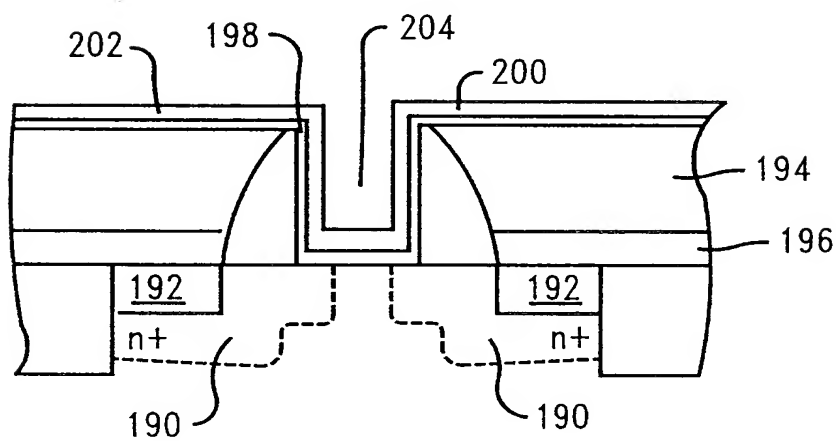


FIG. 9B

REPLACEMENT SHEET
FIS920020157US1

11/16

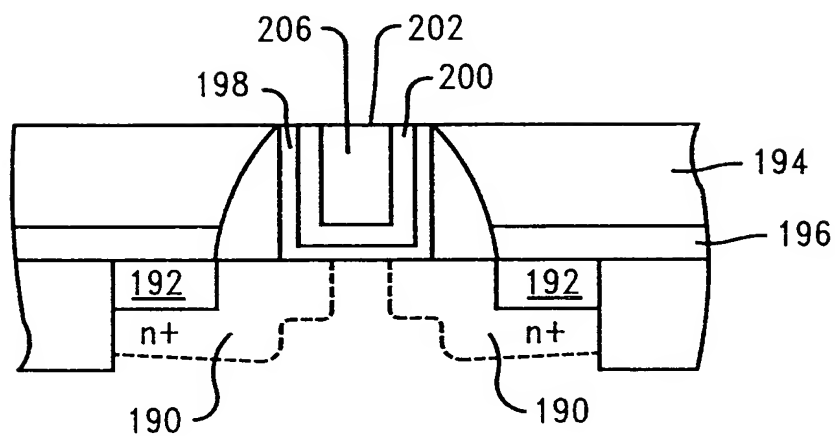


FIG. 9 C

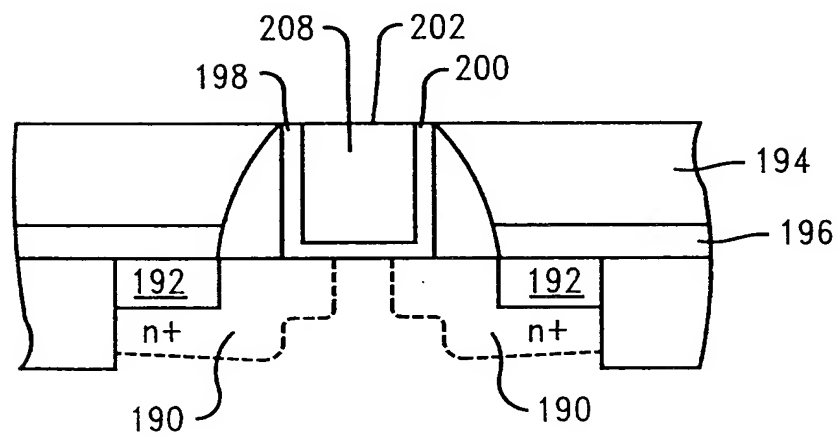


FIG. 9 D

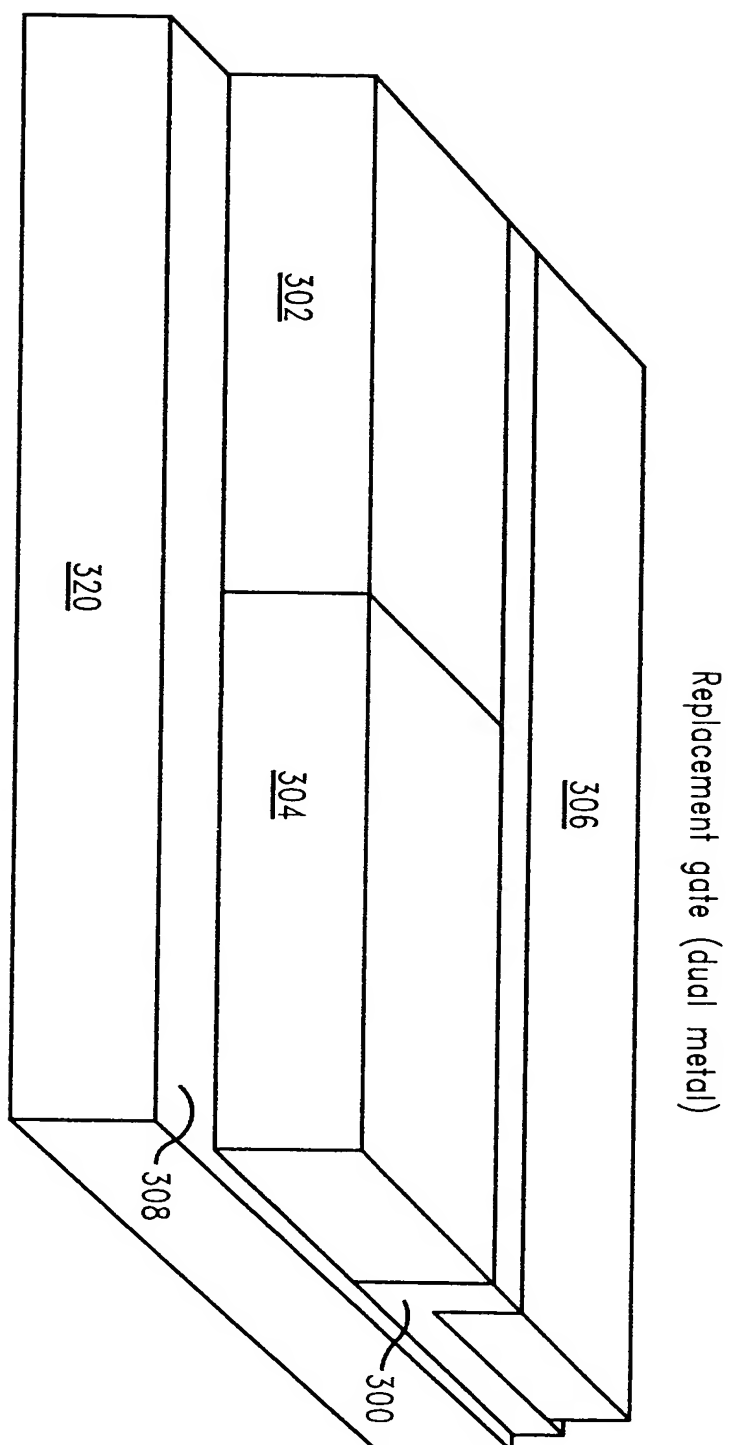


FIG. 10A

Replacement gate (dual metal)
-> Undoped Poly-Si deposition + CMP

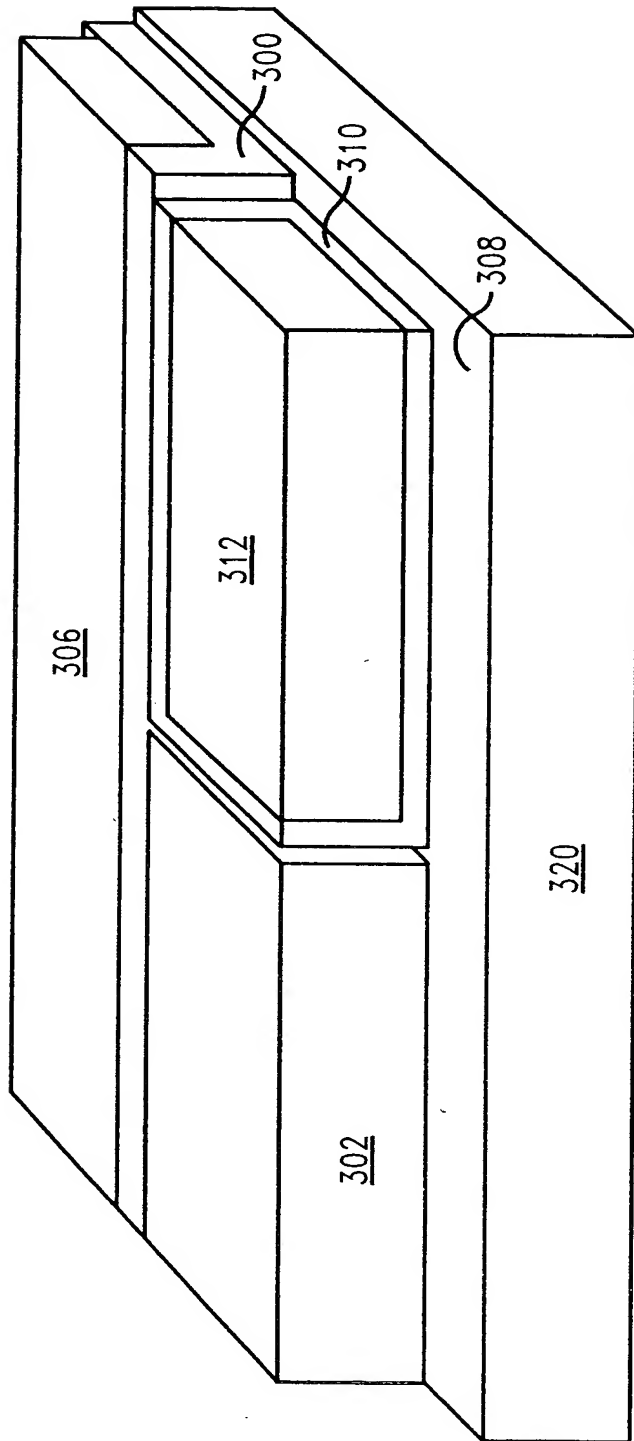


FIG. 10B

Replacement gate (dual metal)
-> Undoped Poly deposition + CMP

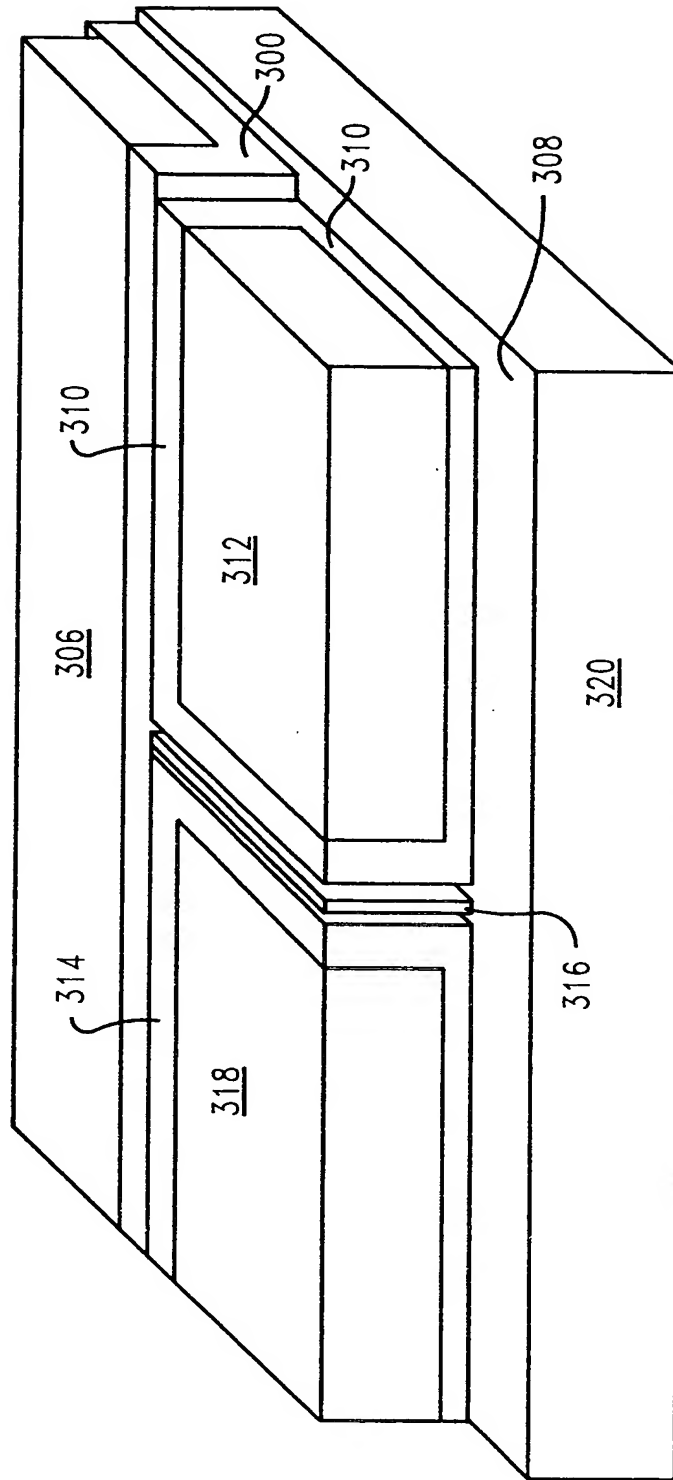


FIG. 10C

Replacement gate (dual metal)
-> Poly- Si RIE back / CMP

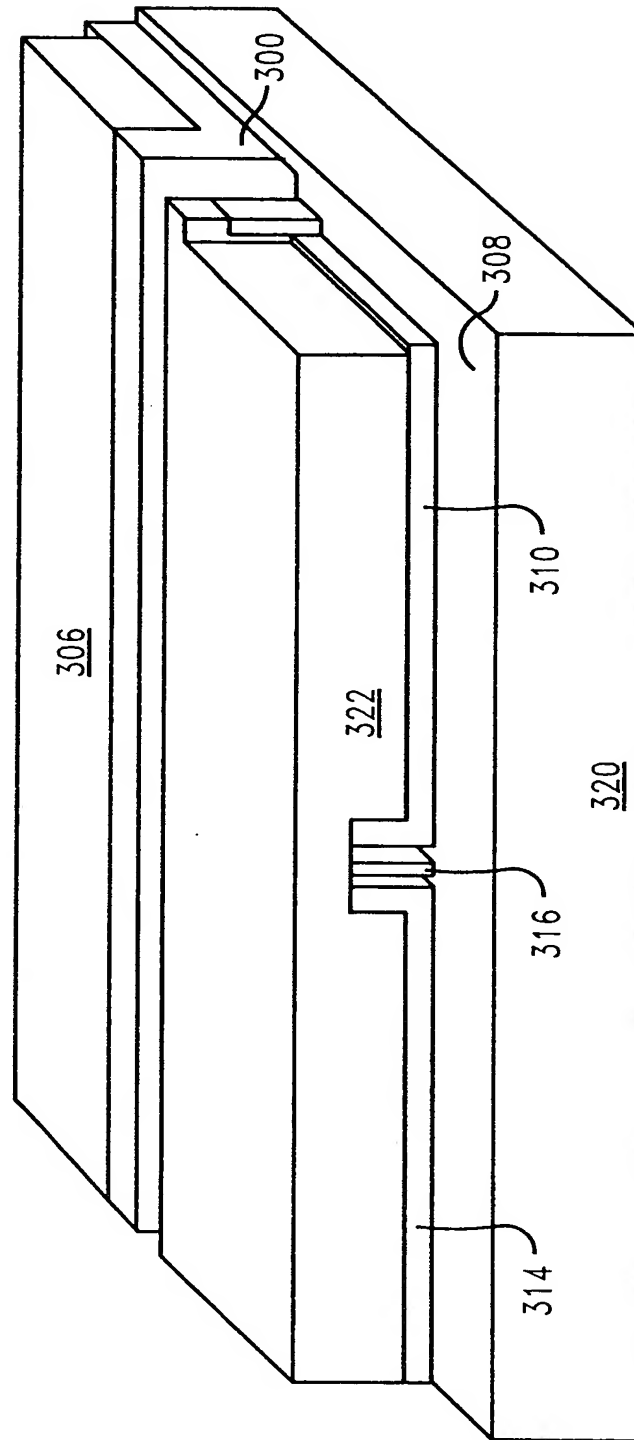


FIG. 10D

Replacement gate (dual metal)
-> Co-silicidation

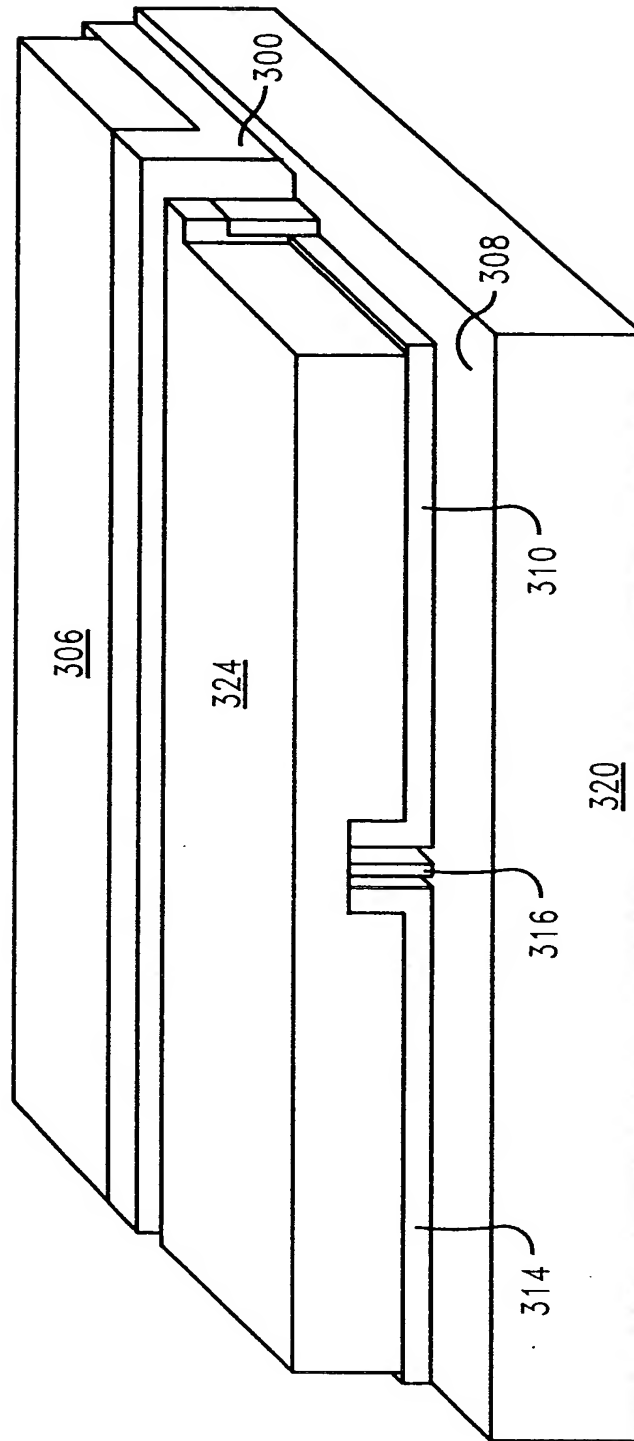


FIG. 10E